Inventions & Innovation Project Abstract

Advanced Aerodynamic Technologies for Ground Vehicle Fuel Economy Improvement and Emission Reduction

SOLUS Solutions is developing an advanced, low-drag trailer system for a tractor-trailer truck. The advanced trailer consists of a traditional box trailer and three novel, low cost and simple aerodynamic devices that are estimated to improve the fuel economy of tractor-trailer by 15 percent at 60 mph. Additionally, the devices minimize lateral aerodynamic loads, improve vehicle stability and handling, and reduce brake wear, splash and spray, and tire wear.

Using computational fluid dynamics (CFD), wind tunnel testing, and controlled on-road fuel economy testing will be key factors in the completion of this project. The three low-cost, simple, geometric based devices are estimated to provide a combined fuel savings of approximately 15 percent at 60 mph. The aerodynamic drag reduction and associated fuel savings result in a measurable reduction in exhaust emissions that is equivalent to the percent reduction in fuel usage. The expected fuel savings from the inventions for an average tractor-trailer truck will exceed 2000 gallons / year. All consumers will benefit from the reduced cost to transfer goods. The environment will benefit as reduced fuel use translates directly into an equal percent reduction in emissions. The reduced emissions also have a positive economic benefit related to the health industry. Additional synergistic benefits from this technology include a boost to the trucking industry productivity from increased profits and new equipment.

Contact

SOLUS - Solutions and Technologies
754 Suffolk Lane
Virginia Beach, VA 23452

Contact: Richard M. Wood
Telephone: 757-486-3570
Email: rick@solusinc.com